

a plurality of pieces into which a wafer is divided” as meaning that the wafer is cut apart into a plurality of separate pieces. This is not the case.

Rather, as shown in Fig. 1, a semiconductor wafer 11 includes a plurality of sections, which are indicated by the dotted lines. Fig. 1 also shows a plurality of film acoustic wave devices 12a-c on the wafer, where each film acoustic wave device occupies a single section (as indicated by dark solid lines. The section of the wafer occupied by a film acoustic wave device is indicated by numeral 14 in Fig. 2. This section 14 of the wafer of Fig. 2 illustrates the claimed feature “semiconductor substrate” of line 2 of claim 26 is referring. However, in order to make it clearer that the claimed semiconductor substrate is not a piece that is separated or cut apart from the wafer, claim 26 has been canceled in favor of new independent claim 41. Claim 41 clearly recites that the semiconductor substrate of each film acoustic wave device comprises one of a plurality of sections of a wafer.

In response to the Examiner’s allegation that the specification does not mention “sections” with respect to Fig. 1, Applicants respectfully submit that the dotted lines (and solid) of Figs. 1 and element 14 of Fig. 2 clearly support the language of claim 41. Applicants further point out that “[t]he claimed invention subject matter need not be described literally, i.e., using the same terms, in order for the disclosure to satisfy the description requirement,” as discussed in *Regents of the University of California V. Eli Lilly & Co.*, 43 USPQ2d 1398, 1405 (Fed. Cir. 1997).

Accordingly, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 112, second paragraph, rejection of claims 27-39, which have been amended to depend on claim 41. Should the Examiner decide to reject claim 41 and its dependent claims under 35 U.S.C. § 112, second paragraph, Applicants respectfully request the Examiner to suggest claim language, which would overcome this rejection.

**35 U.S.C. § 102 (a) REJECTIONS OF CLAIMS 1-15**

Claims 1-15 stand rejected under 35 U.S.C. § 102 (a) as being anticipated by each of U.S. Patent Nos.: 5,194,836 (Vale); 5,185,589 (Krishnaswamy); 5,160,870 (Carson); and 3,401,275 (Curran). These rejections are respectfully traversed for the following reasons.

In the Office Action of April 16, 2001, the Examiner asserted that Vale, Krishnaswamy, Carson, and Curran teach the structure of claims 1-15. In doing this, the Examiner essentially stated that the feature "a shape...dependent upon the position at which the film acoustic wave device is mounted on the wafer" of claim 1 could be ignored because it is not structurally discerning in the final product. The Examiner further reasoned that any final structure was at some point dependent on how it was applied, and that the finished product must rely on its final, set structure for its patentability.

Applicants responded to this rejection, in the previous Response filed June 12, 2001, by stating that claim 1 does not recite a dependency of the pattern shape on how it was applied (as implied by the Examiner), but rather on the position at which the device is mounted. As argued by Applicants, in view of the decision of *Cole v. Kimberly-Clark Corp.*, 41 USPQ2d 1001 (1996), asserted that a location (or position) must be given consideration as a structural element. Accordingly, Applicants argued that the dependency of pattern shape on the position at which the film acoustic wave device is mounted on the wafer does structurally discern the claimed invention over the cited prior art, since none of Vale, Krishnaswamy, Carson, and Curran teaches or suggests this feature.

In the outstanding Office Action, the Examiner responds by asserting that “[i]t would be reasonable to assume that the electrode shapes and placement of the prior art references was predetermined and not just randomly manufactured.” Applicants agree that it would be reasonable to assume the electrode shapes disclosed in the prior art references was not random predetermined. The electrode shapes in the devices disclosed by Vale, Krishnaswamy, Carson, and Curran are in some way dependent on the desired frequency characteristics for which the devices were designed.

However, Applicants submit that this is irrelevant. The fact that electrode shape is dependent on the process of manufacturing fails to

anticipate a dependence of electrode shape on position of the device on the wafer.

There is absolutely no teaching or suggestion in any of these references that electrode shapes are dependent on the position of the device on the wafer, as required by the claims. Further, it would not be a reasonable assumption that the electrode shapes are dependent on wafer location, since none of the prior art references acknowledge or recognize that the position of the device on the wafer affects the frequency characteristics of the devices, such that compensation is required.

For example, in these prior art references, devices that are designed for identical frequency characteristics would be identical regardless of the position on the wafer. This is the only reasonable assumption, considering that it would be more cost efficient to mass-produce acoustic wave devices to have identical electrode shapes.

However, this is not true for the claimed invention, since claims 1-15 recite a dependence of pattern shape to the location on which the device is mounted on the wafer. Therefore, two film acoustic wave devices of the claimed invention, which are designed for the same characteristics, may have different pattern shapes because their positions on the wafer are different.

Applicants respectfully submit that the dependence of pattern shape on the mounted position on the wafer of the claimed film acoustic wave device is structurally discernable over Vale, Krishnaswamy, Carson,

and Curran. Accordingly, Applicants respectfully submit that claims 1-15 are allowable, at least for the reasons set forth above. Reconsideration and withdrawal of this rejection is respectfully requested.

**35 U.S.C. § 102(a) REJECTION OF CLAIM 40**

Claim 40 is rejected under 35 U.S.C. § 102(a) as being anticipated by U.S. Patent No. 3,676,724 (Berlincourt). This rejection is respectfully traversed for the following reasons.

In the outstanding Office Action, the Examiner has failed to respond to Applicants' remarks traversing this rejection in the previously filed Response of June 12, 2001. Similar remarks are included below. Applicants respectfully request the Examiner to consider these remarks and, should the Examiner not find them persuasive, please indicate his reasoning with respect to these arguments in the next communication.

Independent claim 40 clearly recites that the pattern shape corresponding to the plurality of elements on the substrate is changed by a position at the substrate. For the reasons discussed above with respect to independent claim 1, Applicants submit that this feature structurally discerns the invention of claim 40.

Berlincourt discloses a multi-element circuit component formed on two surfaces a wafer. While Berlincourt teaches that the area covered by an element (electrode) can be changed in order to change the frequency

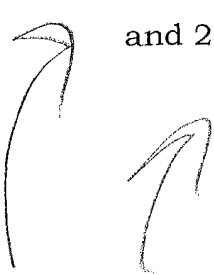
characteristics of the circuit component, Applicants respectfully submit that Berlincourt fails to teach or suggest that the pattern shape formed on either surface changes according to the position of the pattern on the substrate.

Applicants respectfully submit that claim 40 is allowable at least for the reasons set forth above. Reconsideration and withdrawal of this rejection is respectfully requested.

**35 U.S.C. § 103(a) REJECTION OF CLAIMS 25-39**

Claims 25 and 27-39 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Carson, Krishnaswamy, or Vale in view of Curran. This rejection, insofar as it pertains to the presently pending claims, is respectfully traversed for the following reasons.

In the Response of June 12, 2001, Applicants made the presumption that the Examiner had actually meant to reject the above-identified claims as being unpatentable over Carson, Krishnaswamy, or Vale in view of Berlincourt. However, the outstanding Office Action continues to state that these claims are rejected in view of Curran, instead of Berlincourt, even though the Examiner responds to Applicants' remarks by referring to the teachings of Berlincourt. Applicants respectfully request the Examiner to clarify the situation the next Office Action as to which prior art references are being used to reject claims 25 and 27-29. Applicants further respectfully submit that the finality of this



Office Action should be withdrawn, since it is still unclear exactly under what grounds claims 25 and 27-29 are rejected.

In Applicants' remarks of June 12, 2001, Applicants argued that the problem of variance in the thickness of the wafer during the process of sputtering the piezoelectric thin film onto a wafer is not contemplated by any of Carson, Krishnaswamy, Vale, Curran, and Berlincourt. Applicants further argued that the Applicants' recognition of this problem and their particular solution is indicative of the non-obviousness of the present invention, as discussed in the decision of *In re Sponnoble*, 160 USPQ 237 (C.C.P.R.E. 1969).

Applicants respectfully submit that, in the outstanding Office Action, the Examiner has mischaracterized these remarks as an allegation that electrode surface area or overlap area is not a known factor in determining the frequency of a piezoelectric resonator. Applicants are not questioning whether Berlincourt teaches that variations in electrode thickness and density affect the resonance of the devices. Applicants are simply stating that none of the prior art references acknowledges the non-uniformity of piezoelectric thin film thickness on a wafer during the production process.

Accordingly, while Berlincourt may disclose that thickness of the electrodes of a piezoelectric device can be determined in order to obtain the desired frequency characteristics, this reference provides absolutely no disclosure that the position on a wafer affects the frequency

*Final  
7/27/97  
Adjusted  
at 8/27/97*

characteristics of the device. Therefore, none of Berlincourt and the other cited prior art references would provide any suggestion to one of ordinary skill in the art that the electrode thickness should be changed based on the position of the device at the wafer to compensate for the non-uniformity of film thickness on the wafer. Simply put, the position of the device at the wafer is not acknowledged by any of the cited prior art references as a factor to be taken into account when determining the thickness or shape of the electrodes.

*Not  
True  
Not Explicit,  
But it  
is  
compensated  
for in  
final adjustment.*

X Applicants respectfully submit that claims 25 and 27-39 are allowable at least for the reasons set forth above. Applicants respectfully request the Examiner to reconsider and withdraw this rejection, accordingly.

### **CONCLUSION**

The Examiner is respectfully requested to enter this Amendment After Final, in that it presents no new issues. New claim 41 merely recites a clarified version of the features previously presented and considered in claim 26, and thus place them in condition for allowance.

Additionally, the Examiner is respectfully requested to enter this Amendment After Final in that it reduces the issues for appeal.

In view of the above amendments and remarks, reconsideration of the various rejections and allowance of claims 1-15, 25, and 27-41 is respectfully requested.



In the event that there are any outstanding matters remaining in the present application, the Examiner is invited to contact the undersigned at (703) 205-8000 in the Washington, D.C. area, to discuss this application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. 1.16 or under 37 C.F.R. 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment: Version with Markings to Show Changes Made